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could readily imagine an Abyssinian dividing the Antarctic into King Theodoros Land and King Menelik Land, and a Zulu dividing it into King Chaka Land and King Mosilikatse Land, but any attempt on the part of an American or of a continental European geographer to introduce such nationally self-glorifying names would certainly and justly be looked on as the whim of an insane person.

To return now to Dr. Mill's pertinent and sensible suggestion, it would seem well that geographers should consider before the next meeting of the International Geographical Congress whether a Committee on South Polar Names should or should not be appointed. If fair and impartial persons were chosen—for instance, Dr. Nordenskjöld for Sweden, Captain de Gerlache for Belgium, Dr. Wichmann for Germany, Dr. Mill himself for England, and other geographers of their calibre for their respective countries—it is probable that, if time enough were given to the matter, such a committee might help to clear up Antarctic nomenclature.

Perhaps, however, it would be best simply to let time and future work gradually sift out the proper and correct names. There does not seem to be any desire among the geographers of the mainland of Europe, nor among those of America, to be anything but fair towards the explorers of all nationalities, and in all probability such names as King Oscar Land, the Powell Islands, Cape Carr, and Palmer Land will gradually take their rightful place on Antarctic maps. It seems, perhaps, as if letting things fix themselves might on the whole be wiser than putting the matter into the hands of any body of men, who, at the best, could only arrange in a hurry, and possibly by a series of compromises, the somewhat intricate subject of Antarctic nomenclature.

CULTIVATED RUBBER.

BY

JOHN C. HORTER.*

So peculiarly misinformed is the world at large on the general subject of India-rubber that it would seem that those even curiously inclined, or for any reason interested, have been satisfied with the

*Mr. Horter is the manager of a rubber-planting company in Nicaragua. The BULLETIN has already printed facts concerning the cultivation of rubber in the Malay Peninsula, and Mr. Horter permits the publication here of some extracts from an unpublished paper by him on the same industry in Nicaragua.—(EDITOR.)

impression they early acquired in the pages of "The Swiss Family Robinson" that rubber in strips is obtained from cracks in the bark of trees found in the woods.

Of the status of cultivated rubber the knowledge is even less; but this is more reasonable, since there has been hitherto practically no real information to disseminate; half the world, with an unexplained prejudice, asserting that planted trees yield no product, or at best succumb to repeated tapping, and are a flat failure, while the other half, who have really read extracts from reports which apparently tend to such evidence, vehemently claim that cultivated trees when seven years old, and from then on in an increasing ratio, give from two to six pounds of rubber per year.

A subject which has been so mistreated may be illumined by a statement of the first practical experience in tapping many thousands of cultivated trees, not only once, but twice at intervals of three or four months; and watching the effect of the knife on them. In the belief that the world is interested, the tale told by these trees is here set forth.

That the yield of planted trees is disappointing, at least when compared with expectations, this experience will unfortunately show. But it is not to be inferred that the cultivated tree yields less than the wild tree of the same age. The exaggerated hope for the cultivated tree has grown out of ignorance of the actual age of the wild tree, of which there plainly could be no data. The size of the wild tree as compared with the planted tree gives no hint of its years, for its growth in the shade is much slower than that of the sun-grown cultivated tree.

In the district under consideration, which is thirty miles from Bluefields and near Pearl Lagoon, the oldest rubber plantation was planted with seed of the "*Castilloa Elastica*" species in 1897. On this plantation in May, 1904, were tapped 6,000 trees, and an average of one and one-third ounces of dry rubber was obtained from each tree. The total product was shipped from Bluefields in June, 1904. The product of the second tapping of the same trees left Bluefields on Dec. 14.

These are the only considerable shipments from cultivated trees from Nicaragua, and, if there has been any wholesale tapping elsewhere, or anything more than in an experimental way, the fact has not been made public.

The neighbours were aghast at the small showing, and ascribed it either to the wrong season of the year, or to an inadequate number of incisions, or to the instruments employed. After waiting for

months, in order to note the effect of the first tapping on the trees, and finding none in any way impaired, the second bleeding was commenced. The same 6,000 were cut, and a few thousand more, resulting in an average yield from each of one and eleventh-sixteenths ounces.

Intrinsically, the quality of cultivated rubber is precisely the same as that taken from wild trees, since both are of the species "*Castilloa Elastica*," which is found in the forests of all the Central American countries. Commercially, however, the product of the planted tree is likely always to be more valuable because of the greater care in gathering it. In the forest a tree of the size of those tapped on the plantation is much older, and therefore gives much more milk. This milk is not only permitted to find its way to the base, but is guided there, where it mingles with the dirt and spreads itself into a cake, or what is called *cuero* or *tortilla*. No effort is made to keep it clean; on the contrary, the added weight of the adhering dirt is aimed at. If the expectation of the yield is disappointing, it is in a measure a compensation to know of the vitality of the planted and cared-for *Castilloa Elastica*.

During the first tapping an incompetent chopper entirely girdled twenty-three rubber trees before he was discovered and stopped. They healed the same as the remainder, and were bled along with them at the second milking, giving the same quantity of rubber as the other trees.

As long as the sap is not cut into or girdled, the outside layers of the bark of the rubber tree may be cut clean around, or, in fact, removed from any considerable space with impunity. We have, in fact, seen as much as two feet peeled off. The bark alone contains the milk—the product—and in no way affects the life of the tree.

The majority of planted trees are cultivated in the sun, and the great tenacity of life which they show is owing to the influence of sunlight, which helps the tree to resist the encroachment of disease or any attack on it. Hence the incisions made with the knife on the planted tree heal very much more rapidly than on the wild tree, which is always in the deep shade.

The wild tree when tapped is ascended by means of the same spur that is used by the telegraph-pole climber. These spurs penetrate the bark. In the holes thus made is deposited a worm, which eats through the trees and causes its destruction. It also attacks the planted tree; but, as already explained, the influence of the sun which the wild tree lacks soon nullifies its work.

There are very few, if any, large trees remaining in the forest,

and one that gives as much as five or six pounds of dry rubber at a tapping is a rarity. Stories of 100 pounds to a tree are still told by old gatherers, but there are no means of confirming such stories now. The native never keeps a record of anything, and can seldom give the date of his own birth, or of any other event. The opinion, then, of these people, if asked as to what a certain tree will yield, is of no value, but it is probably responsible for the exaggerated hopes that have been entertained by the outside world.

Some of the earlier plantings here were from seed sown in nurseries and, after about a year, transplanted to the land cleared and prepared for them. More recent plantings, however, are from the seed, about five being put in a hill, where the fittest only is allowed to survive. Most of the plantations have their trees ten feet apart, some no more than seven; our own are fifteen. The open sunlight has been given in almost every instance after the trees were removed from the nurseries until they were three years old.

Why there should be any unreasoning disbelief in the successful cultivation of rubber it is difficult to understand; for was there ever yet a tree, bush, or vine growing spontaneously in the earth that was not bettered by man's care and cultivation? In Nicaragua, where the wild rubber tree is called "God's tree," it does not seem unreasonable to expect it to grow, to flourish, and to yield. If disappointment now seems to attend these efforts and the reward appears inadequate, it may only be because hope was set too high; and had expenditures been originally made with more reasonable expectation, the results as they are now disclosed would not present a wholly discouraging view.

A word about stock companies formed to plant rubber. United States Consuls at many stations, on hearsay evidence only, and without any knowledge whatever of their own, were responsible, when these companies were formed, for the exaggerated hopes of many investors.

It was very reasonable on the part of the originators of these companies to promise a return which their own investigations had led them honestly to expect; and, if the results only just now disclose error, it by no means follows that there was originally any intention to deceive. It was and is a mistake for a poor man to invest in planting rubber, the returns from which cannot be looked for short of several years. Investors were invited into these companies on some sort of a monthly instalment plan, and, growing tired (just as that class of investors usually do) and defaulting on their promises, probably caused the failure of the companies for want of funds.

The rich man alone can afford to plant rubber. Certainly, some one must do it, and at once, if the world is to be supplied. With the full yield from every tree now in cultivation, there will not be enough from such a source, with the wild tree out, to supply one large city. For the rich man who wants a safe investment paying a fair rate of interest there could be no better opportunity than to plant rubber.

This incontrovertible fact stands out; it costs \$1 (and in many cases much more) to bring the cultivated tree to its seventh year. The tree then gives but four and one-sixteenth ounces of rubber; after deducting the cost of gathering the rubber and caring for the plantation and after the seven years of waiting the return only then begins to be 6 per cent. on the investment.

THE PARTITION OF SAKHALIN.

One of the results of the Treaty of Peace between Japan and Russia was the partition of Sakhalin, so that the southern part of the island has come into the possession of Japan. Our map shows the boundary between the Japanese and Russian territories. It is a line coinciding with the Fiftieth parallel of north latitude. As the northern or Russian part of Sakhalin is wider than the southern part, Russia retains more than one-half of the area, and, as far as is yet known, the larger area of coal fields, which thus far appear to be the most important source of mineral wealth.

Japan's territory, on the other hand, being farther south, is somewhat superior in climatic conditions, and therefore in agricultural prospects. There is little opportunity, however, for very important farming development, as the growing season is too short, even in the south, to mature cereals, though large quantities of other vegetable food may be raised.

The great attraction of the island for the Japanese was the fishing-banks along parts of the coasts, which are rich in fish food, and may be developed into fisheries of very large importance. Our map shows the portions of the coast-line where these fisheries are of most value; and it will be observed that the most extensive of the fishing-grounds have come into possession of the Japanese. Another source of wealth by which the Japanese will profit is the fur animals, and especially the sable. As yet the forests of Sakhalin have been little hunted for them, though the leading fur animals of Siberia